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ABSTRACT

Effects of sex of speaker and sex of dyad partner on selected linguistic variables were examined in four-minute segments of 20 conversations between previously unacquainted college students. Five male dyads, five female dyads, and ten mixed dyads were studied. Three significant interaction effects were found. Males and females produced about the same number of qualifying words ("maybe," "sort of") when talking to males, but males produced fewer and females produced more qualifying words when talking to females. Both males and females produced more false starts when speaking to someone of their own sex than when speaking to someone of the opposite sex. Inequality between dyad members in number of words spoken was greater in female dyads than in male or mixed dyads. (Author)

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"Linguistic Sex Differences During Initial Interaction"

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"Linguistic Sex Differences During Initial Interaction"

In recent years there has been a surge of academic and popular interest in identifying possible differences between male and female speech. Differences have been alleged, but little substantial empirical evidence has been generated to support the allegations.

Commonly-held stereotypes reflect the assumption that men and women talk differently. Woman's speech has been stereotyped as "stupid, vague, emotional, confused and wordy" (Kramer, 1974, p. 82). Women have been called "talkative;" yet they also supposedly speak less and less forcefully than men, and engage in more expressive, stroking talk (Bernard, 1972, p. 137). Male speech, on the other hand, is characterized as simple, direct, assertive, logical, and businesslike (Thorne and Henley, 1975, p. 235).

Edelsky (1977), in a study of stereotype acquisition, presented various-aged children and adults with written sentences containing alleged gender-related linguistic differences. She found that older children and adults responded in a way which exhibited "knowledge that proves that a language/sex of speaker stereotype exists, and they show agreement on many of the particulars of the details concerning those stereotypes" (p. 226).

Some research has indicated that the stereotypes are related to actual differences between male and female talk, even though the nature of those differences is not clear. This is shown in three recent studies where subjects clearly evaluated male and female talk differently even though there were no obvious cues to the gender of the speaker.

In a study of the effects of speech on receivers, Mulac and Rudd (1977) found that female speakers were perceived as higher in "aesthetic quality" than males, while males were felt to be higher in "dynamism." In a later study, Mulac and Lundell (1977) found again that females were rated higher on "aesthetic quality" than males and "the language of male speakers led to speaker images rated as stronger, more active and aggressive than those of female speakers" (p. 8).

In a similar study of sex-linked conversational differences in interviewing situations, Shaw (1977) found that male interviewers were perceived as being significantly more fluent, more active, and in general better interviewers than female interviewers. Male job applicants were perceived as significantly more confident than female applicants.

It must be noted that in all three of these studies the speech samples were presented as transcripts which eliminated all obvious cues to the gender of the speaker. This suggests that the responses of raters were <u>not</u> caused by stereotypical reactions to males and females in general. It rather suggests that differences in ratings may reflect some actual differences in male and female speech, although the findings did not reveal on what bases the subjects distinguished between male and female talk. It was not clear what aspect(s) of speech led the subjects to make the differing evaluations.

What are the bases for these perceived differences reflected by popular stereotypes and suggested by the consistently different evaluations of male and female speech? The empirical data bearing on this question are sparse, conflicting, and inconclusive.

The conflicting results may be related to several shortcomings of the research done to date.

One source of conflicting results may be inconsistency of definition and measurement. Researchers have measured certain aspects of talk (e.g. fluency, amount of talk, and interruptions) differently. For example, fluency has been operationalized in at least three ways; frequency of filler words (ah, uh, duh, um, etc), frequency of false starts, and number of unfinished sentences. Amount of talk has also been measured differently: by the number of words produced, or by the amount of time the speaker held the floor. Interruptions have been measured by some researchers as occurring <u>any time</u> there is a violation of the basic rule "one person speaks at a time" (Speier, 1973, p. 101). Other researchers have distinguished between interruptions and overlaps (when persons are simultaneously constructing the conversation: neither violating the other's right to a turn). And finally, other researchers have noted that some "interruptions" are supportive "minimal responses," when persons speak simultaneously, but one is producing <u>supportive</u> utterances, clearly <u>encouraging</u> the speaker to continuing talking. This lack of consistency in definition and measurement may contribute to the inconsistency in findings. It is important that researchers explain their definitions and rationale for these definitions, in order to arrive at useful and consistent ways of measurement.

A second source of conflicting research results may be different procedures of data collection: elicitation, introspection, anecdote, observation, and tape recording of interaction. As Thorne and Henley (1975) point out, methods such as elicitation, introspection, observation, and anecdote are all highly susceptible to influence by preconceptions. Investigators have noted that even the simple act of transcribing involves subjective decisions on the part of the researcher--what is transcribed and how (Cherry, 1975). Judgments may reflect unconscious expectations of specific language behavior of one sex or the other. Also, these different methods may focus on different communication situations (e.g. spontaneous social talk, elicited talk, written speech). Some of the lack of agreement as to the nature of sex differences, then, may be a result of different speech situations. It is important, therefore, to be explicit about the specific situations and methods of observation used in studies.

A final reason why research has produced conflicting results may be the complexity of the relationship between sex and communication. There are many variables in addition to gender which influence linguistic choices. These variables may include, for example: the speaker, the topic of discourse, the situation, and the attitude of the speaker toward the topic (Shaw, 1976, p. 2). Parkinson and Gorcyca (1977) caution that investigations of differences between male and female talk must be carefully controlled for education, profession, and topic differences, as these variables may greatly influence the possible generalizations of the results. It is possible that research investigating sex

differences has not controlled for such variables and that differences that emerge are not related only to gender.

In sum, research strongly indicates that there are some differences between male and female talk, although the nature of those differences is not clear. Results have been conflicting. The conflicting data may be a consequence of inappropriate or inconsistent definitions and research methodologies. It has also been noted that the relationship between gender and communication may be complex. Differences between the sexes may be influenced by other variables.

This study is an attempt to begin to understand more clearly the relationship between gender and language behavior by more carefully defining and delimiting the subjects, speech situations, and communication behaviors investigated. The study examined the spontaneous social conversation of male and female middle class American college students in a specific situation: initial social encounters. The first major issue of this study is: Do men and women talk differently? and the second major issue is: Does the composition of the dyad (specifically, the combination of sexes) influence male-female differences? Following are the specific research questions, a summary of pertinent related research, and definitions of the variables examined.

Question 1: Do women use more tag questions than men?

A tag question (e.g. She will come, won't she?) is midway between a question and a statement and allegedly reflects hesitation and uncertainty in conversation. Robin Lakoff (1973) asserts that women produce more tag questions than men, though her methodology has been questioned (Dubois and Crouch, 1975). Edelsky (1977) found that adults identified tag questions as "female talk."

Question 2: Do women use more self-referent words than men?

It has been suggested that women tend to talk more about their experiences and feelings and therefore use more self-referent personal pronouns (Gleser, Gottschalk, and Watkins, 1959; Hirschman, 1973). Shaw (1977) in a study of sex differences in communication in an interviewer-applicant interaction found no differences between men and women in their use of self- or other-referent pronouns. Further research seems warranted. In this study, self-referent words examined were: I, I'd, I'm, I've, me, mine, my, myself, our, ours, we'd, we, we'll, we're, and we've. Other-referent words were: you, you'd, you'll, you're, you've, your, yours, and yourself (Shaw, 1977, p. 138).

Question 3: Do women use more qualifying words than men?

Like tag questions, qualifying words (e.g. maybe, sort of, I think, I guess) also lessen the impact of a statement and reflect uncertainty and non-assertiveness in conversation. It has been suggested that women use more qualifiers than men (Hirschman, 1973), but research findings have not substantiated the claim. Hirschman (1973,1974) found no differences in the number of qualifying words produced by males and females in dyadic interaction, but it is possible that the words examined by Hirschman were not sufficiently inclusive. In this study the list of qualifying words chosen was more comprehensive: although, appears, but, can, could, guess, if, may, maybe, might, ought, probably, seem, seems, should, think, sorta, though, unless, and would (Hart, 1976, p. 212).

Question 4: Are women less fluent than men?

It has been suggested that women are less fluent than men, but fluency has been defined in different ways and results have conflicted. Hirschman (1973) examined differences in filler words (uhm, well,

like, you know) and found that females used a higher percentage of fillers than men. In a later study (1974) she found no differences. In a pilot study we found no differences in the number of fillers, but found that females produced more unfinished sentences (ellipses) than males.

In this study fluency was measured in three ways: frequency of fillers (ah, ahm, dah, uh, uhm, and you know), false starts (a speaker hesitates or changes syntactic structure in mid-utterance), and ellipses (a speaker stops speaking before syntactical completion of an utterance).

Question 5: Do women talk less than men?

Amount of talk seems to be related to dominance/submission in conversation (Soskin and John, 1963). Researchers have suggested that males talk more than females, and there is substantial support of this claim (Strodtbeck, 1951, 1957; Argyle, Lalljee, and Cook, 1968; Bernard, 1972; Hilpert, Kramer, and Clark, 1975; Swacker, 1975). However, there are conflicting data. In two separate studies Lynette Hirschman (1973, 1974) found no clear gender differences in the amount of speech. This may be a result of using different ways of measuring amount of talk: by number of words, length of time person held the floor, or mean length of urterance. In this study amount of talk was measured in two ways: total number of words and mean length of utterance.

Question 6: Do women ask more questions than men?

Asking questions also seems to be related to dominance/submission. The more submissive interactant may ask questions to draw out the other, to focus on the other interactant. It has been suggested that women play a facilitating role in interaction (Soskin and John,

1963; Hirschmen, 1974) and that this role may be prescribed behavior for American females. Again, there is little empirical evidence to support this assertion. Further research needs to be conducted before we can answer the question of whether women ask more questions than men and the larger question of whether this is a way of showing subordination and submission to men (Kramer, 1974).

Question 7: Do women interrupt less frequently than men?

Interrupting in conversation also seems related to dominance/submission. Interrupting the other interactant reflects a dominant role and being interrupted and not protesting seems to reflect a submissive role in interaction. Argyle et al (1968) report: "It looks as if males are motivated to dominate and do so largely by interruption and talking more, especially when the normal cues for floor apportionment are absent" (p. 15). Zimmerman and West (1975) suggest that dyad composition is important. In an investigation of interruptions in spontaneous speech they reported that virtually all interruptions (98%) were by male speakers in mixed sex dyads, while interruptions in same sex dyads were symmetrically distributed between speakers.

The definition of "interruption" in previous research has not been entirely clear. In this study a distinction is made between interruptions (cases in which the speaker's turn is clearly violated) and overlaps (cases in which the secondary speaker was talking at the same time as the primary speaker but was giving supportive utterances --yes, uhum, I see). These behaviors would seem to have different interpretations in terms of a dominance/submission dimension.

Question 8: Does the composition of the dyad influence communication behavior and therefore influence possible sex differences?

This question addresses the second major issue of this study. Previous research has indicated that the composition of the dyad (same-sex or mixed-sex) may be an important factor in the complex relationship between gender and communication behavior (Hirschman, 1973; Zimmerman and West, 1975; Shaw, 1977). Therefore, while this study held constant other situational variables which may influence communication behavior (age, education, socioeconomic status, speech situation), the composition of the dyad was varied.

Method

Subjects in this study were undergraduate student volunteers (ages 18-20) recruited from an introductory speech course at a large, Eastern, state university. The subjects were randomly paired into 20 dyads with 40 subjects: 10 mixed-sex dyads, 5 male dyads, and 5 female dyads.

Subjects came two at a time to a small language study room, where they were told that the research concerned social interaction and were asked simply to get acquainted with each other (none of the dyads were previously acquainted). They were asked to talk for fifteen minutes and were told that the conversation would be recorded. They were introduced and the investigator began the tape recorder and left the room.

Although subjects were <u>told</u> to get acquainted with each other, which might have decreased their spontaneity, it seems likely that persons engage in the same general behavior in the "getting acquainted" or "entry" phase of interaction (Berger and Calabrese, 1975) even if the motivation for doing so varies. Informal questioning of the subjects tends to confirm this assumption. All subjects responded that they thought that this was a close approximation of their

behavior in a "natural" setting and indicated that after the first few minutes they were no longer aware that their conversation was being recorded.

The situation was held constant for all dyads. The situation was an initial encounter for all dyads and should result in conversation characterized by Berger and Calabrese (1975) as entry phase behavior: high uncertainty, information-seeking, high reciprocity, and low intimacy.

The data consisted of four-minute transcriptions taken from each of the 20 conversations. The portions of conversations which were transcribed were taken from the recording after the first three minutes of conversation. The transcribing was done by five research assistants who were trained to follow conventional conversational notation and punctuation, with modifications appropriate to the method of data analysis. A analysis of a check transcription revealed no substantial differences among the transcribers. All transcripts were checked for accuracy by the senior author and corrected where necessary.

The transcribed conversations were submitted to the CLAS (Computerized Language Analysis System) computer program, a natural language analysis program developed by Borden and Watts (1971). CLAS computes standard language statistics as well as print a concordance or index of all words of a text or specified subtext. The transcripts were coded for sex of speaker, sex of partner, and twelve speech variables: tag questions, self-referent words, other-referent words, qualifying words, filler words, false starts, ellipses, number of words, mean length of utterance, interruptions, and overlaps. The CLAS program yielded appropriate counts and statistics for each speaker for the twelve variables.

Since very few tag questions were produced in any of the conversations, that variable was eliminated from further analyses. Examination of the frequency distributions revealed no marked deviations from normality among the other variables.

Conversation to Ratios

Correlations among the twelve dependent variables were computed. As might be expected, several variables were found to have large positive correlations with the total number of words produced by the speaker. These variables (mean length of utterance, self-referent words, other-referent words, filler words, qualifying words, and false starts) were transformed to ratios per 100 words for further analyses.

Individual and Dyadic Variables

In previous studies, researchers have tended to categorize speech variables as either linguistic or conversational. Linguistic variables include syntactic (tag questions, fluency) and semantic (word choice) aspects. Conversational aspects of talk which have been investigated include amount of talk, frequency of interruptions and number of questions. Categorizing aspects of talk as linguistic or conversational presents some conceptual difficulties, and might perhaps be better approach in terms of dyadic interdependency of certain variables. From this point of view, it seems that there are two kinds of speech variables: those which are individual, which operate independently of the other person in the dyad, and those which are dyadic, which are dependent on the interaction of the conversants. For example, a speaker's fluency might not be influenced by the partner in a conversation. Fluency, then, could be treated statistically without regard to the partner's behavior and would reflect the speaker's individual language behavior. However, the amount of talk of an interactant cannot be so easily assessed individually. It may depend on how much the dyad partner talks. The amount of speech, then, would not be statistically independent between the dyad partners. For dyadic variables like amount of speech the dyad, rather than the individual, should be the unit of analysis for statistical

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purposes. This way of handling the problem seems to avoid the necessity for arbitrary conceptual distinctions between "linguistic" and "conversational" variables.

To discover which behaviors were dyad-dependent and which were dyad-independent, the dyad members' scores on each variable were correlated. A strong positive or negative correlation between the interactants for any variable would indicate that the interactants' behavior was interdependent with respect to that variable. Significant correlations were found for two variables: number of words ($r = -.73$) and number of interruptions ($r = .73$). These were treated statistically as dyadic variables, while the remaining variables were treated as individual variables. The statistical treatment of dyadic and individual variables is discussed below.

Analysis of Variance

The data were submitted to two-factor analyses of variance. For individual variables the two independent variables were sex of speaker and sex of partner. For the dyadic variables same-sex partners' scores were averaged and treated as one score, while mixed-sex dyads were given two scores: one for the male member and one for

for the female member. Each of the thirty resulting scores was then either a male or a female score and was either a dyad average or an individual score. In the two factor analysis of variance, then, the independent variables were sex and dyad composition (same or mixed).

Results

Question 1: Do women use more tag questions than men?

There were very few tag questions produced in any of the conversations, and so this index was eliminated from the final analysis. The question of whether women produce more tag questions than men proved to be inappropriate and therefore is not answered in this study.

Question 2: Do women use more self-referent words than men?

There were no significant effects on self- or other-referent words as a function of sex of speaker or sex of partner.

Question 3: Do women use more qualifying words than men?

For the rate of qualifying words produced there was a significant interaction effect between sex of speaker and sex of partner ($F=4.51$; $d.f.=1,36$; $p < .05$). That is, there were differences between males and females in the rate of qualifying words, but these differences were influenced by the sex of the partner. A Scheffé post hoc comparison of means revealed that there was a significant difference between the mean rate of qualifying words produced by female-male dyads and females and males in other dyads. Males and females talking to males produced about the same rate of qualifying words ($\bar{X}=2.51$ and 2.50 respectively). However, when males and females talked to females they behaved differently. When talking to females, males produced fewer qualifying words ($\bar{X}=1.92$) and females produced

more qualifying words ($\bar{X}$=2.96). That is, males and females produced about the same rate of qualifying words when talking to males, but when talking to females both sexes changed behavior but in opposite directions.

There was also a significant main effect of sex of speaker for qualifying words ($F=4.46$; d.f.=1,36; $p < .05$). Overall, females produced a higher rate of qualifying words than males.

Question 4: Are women less fluent than men?

There were no significant differences between males and females on two of the three indices measuring fluency: rate of filler words and number of ellipses. However, there was a significant interactive effect between sex of speaker and sex of partner for the rate of false starts ($F=5.53$; d.f.=1,36; $p < .05$). That is, the difference in false starts produced by males and females depended on the sex of the dyad partner. In general, males and females both produced more false starts when speaking to a same-sex partner than when speaking to a partner of the opposite sex. Males talking to males produced the highest rate of false starts ($\bar{X}$=3.80). Females talking to females also produced a high rate of false starts ($\bar{X}$=3.41). Males talking to females produced fewer false starts ($\bar{X}$=2.73) and females talking to males produced the fewest false starts ($\bar{X}$=2.38). However, a Scheffé post hoc comparison of means revealed that none of these differences were significant.

Question 5: Do women talk less than men?

There were no significant differences between males and females in the amount of talk as measured by the number of words produced or the mean length of utterance. There was a nonsignificant trend of both sexes talking more to females than to males.

However, examination of the conversations suggested a possible difference between same-sex and mixed-sex dyads in the number of

words produced by each partner in the dyad. In most dyads the partners seemed to contribute approximately the same number of words to the conversation. But it seemed that in certain dyads, one interactant tended to talk a lot more than the other.

Appropriate data were compiled by subtracting the number of words produced by one interactant from the number of words produced by the other in each dyad. These data were then submitted to one-way analysis of variance (three groups: male-male, female-female, mixed sex) which revealed a significant effect of dyad composition on the mean difference of words produced by dyad partners ($F=6.99$; $d.f.=2,17$; $p < .01$).

In the male-male dyads, each interactant produced approximately the same number of words as his partner. The differences between partners ranged from 58-237 words with a mean difference of 141.60.

In mixed-sex dyads also the interactants seemed to share the conversation about equally. The range of differences was 35-375 words with a mean difference of 186.30.

In female-female dyads one person tended to dominate the conversation, contributing many more words than the other. The differences ranged from 236-511 words with a mean of 426.40. A Scheffé post hoc comparison of means revealed that the difference between partners in the female-female dyads was larger than in the other two types of dyads ($p < .05$).

Question 6: Do women ask more questions than men?

There was no significant difference between males and females in the number of questions asked.

Question 7: Do women interrupt less frequently than men?

There were no significant results for the number of interruptions nor for the number of overlaps.

Question 8: Does dyad composition influence possible sex differences?

As presented above, the significant differences which did emerge in this study were interactive effects between sex of speaker and sex of partner. That is, composition of the dyad (whom the speaker is talking to) was an important factor in determining differences between male and female speech in rate of qualifying words, rate of false starts, and difference in words produced by the partners.

Discussion

There was only one significant main effect of sex in this study: women produced more qualifying words than men. However, the rate of qualifying words was also significantly effected by the interaction of sex of speaker with sex of partner.

In this study neither sex of speaker nor sex of partner operated alone to determine communication behavior. There were no sex differences that were not influenced by sex of partner.

There are several possible explanations for the lack of main effects of sex of speaker. One is that there are no overall differences between male and female speech. However, as discussed previously, there is strong evidence that male and female speech is different, for raters who are not explicitly aware of the sex of the speaker consistently evaluate male and female speakers differently, even though the bases for the differing evaluations is not clear (Mulac and Lundell, 1977; Mulac and Rudd, 1977; Shaw, 1977). Another possible explanation is that there are overall sex differences but that this study did not assess those differences because of inadequate statistical power or because the wrong variables

were considered. There may, for example, be differences in content between male and female speech, an area not investigated in this study.

The most likely explanation for the lack of main effects of sex, however, seems to be that because other variables influence language style and content in interaction with sex of speaker, differences do not emerge as related only to gender. In this study men and women did exhibit differences in communicative behavior in initial encounters, but those differences were always influenced by another variable--sex of partner (dyad composition). This confirms previous research which suggests that composition of dyad is an important factor in influencing communication behavior of males and females (Hirschman, 1973; Shaw, 1977). It also emphasizes the importance of controlling for other variables which influence communication style and content when investigating the relationship between communication behavior and gender.

There were significant interactive effects or effects involving dyad composition for three of the eleven dependent variables studied.

The difference in number of words produced by dyad partners was significantly influenced by dyad composition. In all dyads except female-female dyads the communication behavior followed the pattern expected in initial interaction. There was high reciprocity--an equal amount of conversational input from each partner. In female-female dyads, however, there was a striking departure from the expected pattern. One person always dominated the conversation, contributing many more words than the other interactant. The pattern of low reciprocity exhibited by female-female dyads is more characteristic of later stages of interaction, when persons are better acquainted and tend to listen to the other person for longer periods of time.

Perhaps women move more quickly to a pattern of relating which is characteristic of later stages of relationships. It is possible that women feel more comfortable in initial interactions with other women than with men. This supports the suggestion by Lynette Hirschman (1973) that "women may be able to talk more easily to each other than to men that they do not know" (Hirschman, 1973, p.10). This result may partially explain the stereotype of the "talkative woman," since women may be seen to talk a great deal when one woman talks significantly more than the other in female-female interaction.

It would be interesting to investigate this behavior further, to discover if female-female initial interaction reflects other characteristics of later phases of interaction: low uncertainty and high intimacy. Investigations of the relationship between sex and self-disclosure suggest that there are sex differences in intimacy level, with males reportedly less intimate than females (Mark, 1976; Molinoff, 1974; Mulcahy, 1973). Recent research, however, cautions that these differences are confounded by other variables such as situation, topic, and subject-target relationship, and that there may not be clear, overall differences between males and females in self-disclosure (Rosenfeld, Civikly, and Herron, 1979).

Qualifying words was a second variable influenced by dyad composition: an interaction between sex of speaker and sex of partner. Females and males produced about the same rate of qualifying words when talking to males, but females produced more and males fewer qualifiers when talking to females. There are at least two possible interpretations of this result. First, if frequent use of qualifying words reflects uncertainty, a reluctance to be definite, as it has

been interpreted in previous studies, then it seems that women are less certain and less definite with other women than they are with men. This supports previous findings that women are less definite than men in conversation. In this study, however, this was true especially for women talking to other women. The second possible interpretation of the interaction is that frequent use of qualifying words reflects a more relaxed, less-guarded attitude. Women may feel that with other women they are not expected to be definite or certain; they are less on their guard and so use more qualifying words. This interpretation is more consistent with the greater relaxation of reciprocity in female dyads, which also suggests a more relaxed atmosphere than in other types of dyads.

For the number of false starts (hesitation, change of word or syntax in mid-utterance) it seems that the difference between mixed- and same-sex dyads is most important. Both sexes produced fewer false starts when talking to members of the same sex. Once again, these results can be interpreted in at least two ways. First, if false starts are an indication of uncertainty and discomfort, as has been suggested by previous researchers, then it seems that men and women are less comfortable talking to members of their own sex than with members of the opposite sex. A second interpretation, however, is that this kind of disjointed, nonfluent talk reflects a more relaxed, less guarded style of talk, the way in which people talk when then feel comfortable with each other. Then this result would be consistent with the theory that women feel more at ease talking to women they don't know than talking to men they don't know. In this case men also can be seen to

feel more at ease when talking to members of their own sex whom they do not know.

The results of this study do not support claims of a dominance/submission pattern of male-female interaction. The results do not clearly show that males were more dominant or that females were more submissive to the extend that those attitudes would be indicated by the variables studied. Neither do the results suggest that females are more adaptive in their behavior than males. The results do, however, strongly suggest that males and females differ in their communication behavior in initial interaction depending on whom they are talking to. There does seem to be a unique pattern of female-female interaction which is different from interaction in dyads of other sex composition.

Results of research on sex-related language behaviors--including the research reported here--have identified some characteristic relationships in relation to communication situations. However, the meanings of these results are usually left open to many possible interpretations, some based on conjecture or, worse, cultural stereotypes. Many of those interpretations suggest relationships between language behavior and various personality traits (dominance/submission, assertiveness/passivity, etc.). Future research ought to test those behavior-personality relationships in order to make more sense out of the sex-related language behaviors that have been identified.

Limitations

Because of the small sample size, the restricted population sampled, the specific speech situation created, and the restricted set of communication behaviors measured, the results of this study cannot be generalized with confidence and should be considered as suggestive rather than conclusive. The results suggest that there

are no very large overall sex differences with respect to certain classes of communication behavior in informal social interaction among middle class American college students. The results further suggest that sex does interact with situational variables--specifically sex of partner--to explain variations in some communication behaviors. In particular, the results suggest that there is a unique pattern of female-female interaction that might be an acceleration of the acquaintanceship process in such dyads. These are only indications and obviously require further research before much confidence can be placed in them.

Implications

The results of this study suggest four directions for future research into gender differences in communication. First, future research should take into account the complexity of variables which influence communication behavior in social interaction. Gender differences may operate in interaction with other variables such as role of the speaker, the topic, the situation, and the attitude of the speaker toward the topic (Shaw, 1976). This study found interactions involving the sex composition of the dyad. Other researchers have suggested that education, profession, and topic need to be taken into account(Parkinson and Gorcyca, 1977).

Second, future research should further refine the definition of "interruption." An interruption has been defined as "the modification of the basic rule 'one person speaks at a time '" (Speier, 1973, p. 101) but such a broad definition fails to distinguish among important variations. Certain variations among interruptions seem especially relevant to the issue of dominance/submission in conversation, the focus of much research on gender differences.

It may be necessary to distinguish among at least three varieties of interruption. The distinctions should be made on the basis of the turn-maintaining and turn-yielding cues of the main speaker: 1) instances in which the partner attempts a turn and the main speaker has given no turn-yielding cues; 2) instances in which the main speaker gives turn-yielding cues but also continues to talk and the partner begins to talk also (neither is violating the other's right to a turn); and 3) instances in which the partner is giving the main speaker encouraging minimal responses (the partner is speaking at the same time as the main speaker but is not asserting a turn). In this study instances (1) and (2) were considered as interruptions and (3) as overlaps. Other researchers have made similar distinctions (Duncan and Fiske, 1977; Shaw, 1977). The distinctions are not easily made by a transcriber working from audio tape, however. Refinement of the concept of interruption thus depends on future research that would clarify the cues which signal the end of a speaker's turn.

Third, future research should further investigate the distinction between individual and dyadic variables in conversation. Some aspects of talk seem to occur independently of the dyad partner while other variables are strongly correlated (positively or negatively) between dyad members. It is advisable to make this distinction for reasons of methodology. The behavior of dyad members is statistically independent with respect to individual but not dyadic variables. Since statistical procedures usually assume independence of sampling, the dyad should be the unit of analysis when dyadic variables are analyzed. The distinction is also theoretically interesting, for it suggests that two realms of style must be distinguished, the individual and the dyadic, and

that each realm comprises a unique set of variables. It is noteworthy that most of the variables investigated in this study proved to be individual variables.

Fourth, a final implication for future research is that gender differences in interaction be examined over time. Our data suggest that females and males do behave differently in some ways during at least one time period in the initial interaction process, the time following the first three minutes of initial contact. Research on initial interaction has found that this phase is characterized by high reciprocity which changes to low reciprocity over time. Female-female dyads exhibited lower reciprocity that other dyads in the present study. It would be interesting to examine this phase of interaction in small time segments to discover if or when males develop low reciprocity characteristic of later phases of interaction. It is possible that all types of dyads exhibit similar levels of reciprocity in later phases of interaction but that female-female dyads reach lower levels earlier. It is also possible that females always are lower in reciprocity, even at later stages of interaction. It would be interesting, then, to examine initial interaction behavior segmentally to discover whether the interactions involving gender found in this study hold true for other stages in the process.

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